

XLI.—Notes on Fossorial Hymenoptera.—XXXIV. On Ethiopian Psammocharidæ in the British Museum. By ROWLAND E. TURNER, F.Z.S., F.E.S.

Family Psammocharidæ.

Cyphononyx optimus, Sm.

Pompilus optimus, Sm. Cat. Hym. B.M. iii. p. 141 (1855). ♀.

Salix (*Cyphononyx*) *lynx*, R. Lucas, Deutsch. Ost-Africa, iv., Hymen. p. 65 (1897). ♂.

Cyphononyx abyssinica, Grib. Ann. Mus. Civ. Genova, xiv. p. 343 (1879). ♀ ♂.

Salix (*Cyphononyx*) *schönlandi*, Cam. Rec. Albany Mus. i. p. 223 (1905). ♂.

Cyphononyx bretonii, Guér.?

This wide-ranging species is referred to by R. Lucas as *Salix* (*Cyphononyx*) *croceicornis*, Duf. *C. bretonii* is a composite species, but I think the name should be retained for the male. The female is a *Batozonus*, which I regard as a form of *B. fuliginosus*, Klug. But if the name is rejected or held to apply to the female, then the present species should be known as *Cyphononyx croceicornis*, Erichs., which has priority over Dufour's name.

Cyphononyx atropos, Sm.

Mygimia atropos, Sm. Cat. Hym. B.M. iii. p. 186 (1855). ♀.

Salix (*Cyphononyx*) *splendens*, R. Lucas, Deutsch. Ost-Afrika, iv., Hymen. p. 65 (1897). ♀ ♂.

This species seems to be spread over the whole of tropical Africa.

Cyphononyx castaneus, Klug.

Pompilus castaneus, Klug, Symb. physic. Dec. 4, 1834, t. xxxviii. fig. 9.

♀.

Pompilus rubescens, Sm. Cat. Hym. B.M. iii. p. 136 (1855). ♀.

Cyphononyx subauratus, sp. n.

♀. Nigra; capite, antennis, prothorace, mesonoto, scutello, post-scutello, tegulis, pedibus, coxis exceptis, segmentisque abdominalibus quinto sextoque fulvo-ferrugineis; alis flavis, apice extremo anguste fuscis, venis flavo-testaceis.

Long. 16 mm.

♀. Clypeus narrowed towards the apex, the apical margin

widely and very shallowly emarginate, microscopically punctured; a few large punctures, from which spring black hairs, close to the apical margin. Second joint of the flagellum about half as long again as the third; the distance between the eyes on the vertex about equal to the length of the second joint of the flagellum; posterior ocelli as far from each other as from the eyes. Pronotum short, nearly four times as broad as its length at the sides, very shallowly arched posteriorly. Scutellum broad, not convex in the middle, postscutellum convex, not tuberculate. Median segment without lateral tubercles; gradually sloped posteriorly, not truncate; coarsely transversely striated. Sixth tergite with sparse setigerous punctures, broadly rounded at the apex, the setæ fulvous with a few black intermingled. The sulcus on the second sternite curved. Hind tibiæ very distinctly serrate, the inner calcar long, nearly half as long as the metatarsus. First recurrent nervure received distinctly before the apex of the second cubital cell, second at two-fifths from the base of the third cubital cell. Cubitus distinctly curved downwards from the second transverse cubital nervure; first transverse cubital very long and oblique as in *Hemipepsis*, the second cubital cell long and narrow; third abscissa of the radius about half as long again as the second. Cubitus of the hind wing originating just before the transverse median nervure. The fuscous border of the fore wing just touches the apex of the radial cell and thence is narrowed rapidly.

Hab. Mlanje, Nyasaland (*S. A. Neave*), November to February; Valley of Kola River, near Mr. Chiperone, 1500–2000 ft., Portuguese East Africa (*S. A. Neave*), April.

This is very distinct from any other African *Cyphononyx*, resembling in colour *C. flavus*, Fabr., an Oriental species, but the shape of the second cubital cell shows an approach to *Hemipepsis*; the tarsal ungues, however, are the same as in *Cyphononyx*.

Type in B.M.

Cyphononyx flavicornis, Fabr.

Sphex flavicornis, Fabr. Spec. Insect. i. p. 450 (1781).

This is distinct from *bretonii*, Guér., having fulvous legs and no blue sheen on the abdomen. I look on *C. antennata*, Sm. (= *irenensis*, Cam. 1910), as merely a variety of this, differing in the colour of the head and thorax, which are mostly black in *antennata* and dull ferruginous in *flavicornis*; but colour varies in a similar manner in some other African

species. The locality Malabar given for *flavicornis* is evidently erroneous, but there are several mistaken localities among the Fabrician types in the Banksian collection.

Cryptochilus gowdeyi, sp. n.

♀. Nigra; femoribus basi nigris, tibiis tarsisque fulvo-aurantiacis, alis flavis, fulvo-tinctis, apice angustissime fusco-marginatis; unguiculis unidentatis.

♂. Feminæ similis; unguiculis bifidis; postscutello conigero. Long., ♀ 25-32, ♂ 22-32 mm.

♀. Clypeus convex, the anterior margin broadly subtruncate, minutely punctured, with sparse large punctures interspersed, from each of which springs a long black hair. Second joint of the flagellum half as long again as the third; eyes separated on the vertex by a distance equal to about three-quarters of the length of the second joint of the flagellum. Head and thorax clothed with black hairs, scutellum and postscutellum not compressed, the former flat, the latter feebly convex. Median segment obliquely sloped on the apical portion, the oblique declivity not sharply separated from the dorsal surface; bluntly, roundly subtuberculate laterally at the base; the dorsal surface rather finely transversely striated, the striæ on the oblique slope much coarser. Abdomen shining, microscopically punctured, with a few larger punctures intermingled; sixth tergite closely punctured, densely clothed with fusco-ferruginous setæ; transverse groove of the second sternite deep and sinuate. Cubitus of the hind wing originating distinctly beyond the transverse median nervure. Radial cell of the fore wing obliquely truncate at the apex; second abscissa of the radius nearly as long as the first and third combined; first recurrent nervure received distinctly before the apex of the second cubital cell; second before the middle of the third cubital cell; submedian cell much longer than the median, the nervulus oblique. Hind tibiæ strongly serrate, tarsal ungues unidentate.

♂. Differs from the female in having the scutellum subtuberculate in the middle, the postscutellum raised into a large conical tubercle; the hind tibiæ are spinose, not serrate, the tarsal ungues strongly bifid. In both sexes the wings are yellow, clothed with minute fulvous hairs, which are much denser towards the base. Seventh tergite of the male broadly truncate at the apex; seventh sternite with a raised triangular area extending nearly to the apex.

Hab. Entebbe, Uganda (*C. G. Gowdey*), May to December; Mabira Forest (*C. G. Gowdey*), July; Buddu, west shore of Victoria Nyanza (*S. A. Neave*), September; Bundongo Forest, Unyoro, 3400 ft. (*S. A. Neave*), December.

This splendid species is one of the few African *Cryptochilus* known to me in which the male has the unguis bifid as in *Cyphouonyx*. Species showing this sexual difference are fairly numerous in India and the Malayan region, and one occurs in Madagascar. The tuberculate postscutellum of the male is remarkable in this species. It appears to be common in Uganda, but I have not seen specimens from any other locality.

Type in B.M.

The African species with dark wings, which have the tarsal unguis differing sexually as in *gowdeyi*, are:—

1. *Cryptochilus natalensis*, D. T.

Pompilus obscurus, Sm. Cat. Hym. B.M. iii. p. 140 (1855). ♀. (*Nec Pallosoma obscura*, Lep. 1845.)

Salix natalensis, D. T. Cat. Hymen. viii. p. 233 (1897).

2. *Cryptochilus severini*, Kohl.

Priocnemis severini, Kohl, Revue Zool. Afric. iii. p. 198 (1913). ♀.

3. *Cryptochilus anguliferus*, R. Lucas.

Salix (Priocnemis) anguliferus, Lucas, Deutsch. Ost-Afrika, iv., Hymen. p. 67 (1897). ♀.

I suspect that *anguliferus* and *severini* are identical.

Pseudogenia pseudocyphonyxa, sp. n.

♀. Nigra, opaca; flagello, articulis duobus apicalibus infumatis, femoribus, basi extrema nigra, tibiis tarsisque fulvo-ferrugineis; mandibulis basi palpisque fusco-ferrugineis; alis nigro-violaceis. Long. 20 mm.

♀. Clypeus very broadly rounded at the apex, sparsely clothed with black hairs; antennæ long and slender, slightly exceeding three-quarters of the length of the insect, the first and second joints of the flagellum combined half as long again as the third joint. Eyes separated on the vertex by a distance equal to the length of the third joint of the flagellum; posterior ocelli much further from the eyes than from each other. Scutellum and postscutellum evenly convex, the sides

of the postscutellum distinctly obliquely striated. Median segment roundly depressed posteriorly, not truncate, distinctly transversely striated, with a median sulcus from the base, which becomes obsolete near the apex. First tergite a little longer than its apical breadth, very rapidly broadened from the base; transverse furrow of the second sternite situated near the base; sixth tergite closely punctured. Second abscissa of the radius long, equal to the third, first recurrent nervure received at three-quarters from the base of the second cubital cell, second at the middle of the third cubital cell; third transverse cubital nervure oblique. Cubitus of hind wing received just beyond the transverse median nervure. Spines of the fore metatarsus very short; hind tibiæ almost smooth, the spines microscopic.

Hab. Mlanje, Nyasaland (*S. A. Neave*), January 1913.

Very similar superficially to the common *Cyphononyx optimus*, Sm., but differs generically, also in the colour of the flagellum.

Pseudugenia esau, Kohl.

Pseudugenia esau, Kohl, *Revue Zool. Afric.* iii. p. 200 (1913).

A form which I take to belong to this fine species occurs at Mlanje, Nyasaland. It is entirely black, but otherwise answers fairly well to the description. The antennæ are shorter and stouter than is usual in the genus, not "tenues," as in the description, and the position of the cubitus of the hind wing is variable, sometimes interstitial as in Kohl's type, sometimes originating distinctly beyond the transverse median nervure.

Genus *CRYPTOSALIUS*, Turn.

Cryptosalius, Turn. *Trans. Ent. Soc. London*, p. 76 (1917).

Allied to the Indian species typical of this genus are several African species which may conveniently be included in the genus.

1. *Cryptosalius robustus*, Cam.

Pseudugenia robusta, Cam. *Rec. Albany Museum*, i. p. 136 (1904). ♀.

In structure this is closely allied to *C. rava*, Bingham, the type of the genus, differing in the shorter inner branch of the bifid tarsal unguis, in the arcuate hind margin of the pronotum, and in the lesser development of the frontal prominence above the base of the antennæ, but agreeing in the

rather abruptly truncate median segment with a distinct longitudinal sulcus on the dorsal surface. This group is separated from *Calopompilus*, Ashm., by the bifid tarsal unguis and by the form of the third cubital cell, which is shorter than the second; not much longer, as in *Calopompilus*, to which, however, the genus is much more nearly related than to *Pseudagenia*.

Less closely related to *C. rava*, differing in the absence of a sulcus on the median segment and in the coarsely rugose or reticulate sculpture of the dorsal surface of that segment, are the following:—

2. *Cryptosalix contristans*, sp. n.

♀. Nigra; propleuris fusco-ferrugineis; alis fuscis, cæruleo-suffusis, anticis macula magna ovata hyalina ante apicem. Long. 15–18 mm.

♀. Clypeus short, slightly convex, broadly truncate at the apex. Head opaque, very closely microscopically punctured; the front triangularly prominent between the antennæ, with a shallow sulcus not reaching the anterior ocellus. Inner margins of the eyes parallel below, distinctly convergent above towards the vertex; posterior ocelli as far from each other as from the eyes. Antennæ rather stout, a little longer than the head, thorax, and median segment combined, the second joint of the flagellum a little shorter than the third. Temples very narrow. Thorax shallowly and sparsely punctured, with close microscopic punctures between; the mesopleuræ coarsely punctured, with irregular ill-defined striæ; the pronotum very broadly arched posteriorly, the sides almost parallel, the anterior margin almost straight; mesonotum longer than the pronotum; scutellum with a distinct longitudinal carina, the dorsal surface flat and triangular. Median segment short, much broader than long, the posterior slope oblique, not sharply divided from the dorsal surface, without lateral tubercles, the dorsal surface very coarsely rugose-reticulate, the posterior slope strongly transversely striated, the sides of the segment more finely and irregularly vertically striated. Abdomen opaque, somewhat elongate; the sixth tergite elongate-triangular, narrowly rounded at the apex; the transverse sulcus of the second sternite situated very near the base. Second abscissa of the radius at least half as long again as the third, the fourth a little longer than the second; submedian cell much longer

than the median; recurrent nervures received very near the middle of the second and third cubital cells; cubitus of the hind wing interstitial. Fore tarsi and hind tibiæ almost entirely unarmed; inner spur of the hind tibiæ fully half as long as the hind metatarsus; tarsal ungues strongly bifid.

Hab. Mlanje, Nyasaland (*S. A. Neave*), January 1913.

3. *Cryptosalius indocilis*, sp. n.

♀. Nigra, opaca, argenteo-pruinosa; alis hyalinis, anticis late fusco bifasciatis, apice angustissime fuscis.

Var. Capite pedibusque fusco-ferrugineis.

Long. 18–20 mm.

♀. Very similar in structural details to *contristans*; the antennæ stout, more or less covered with very delicate silver pubescence, which is also visible on the abdomen; the dorsal surface of the thorax rather less minutely punctured, giving the appearance of very fine granulation; mesopleuræ rugose. Median segment, abdomen, and legs as in *contristans*. Second abscissa of the radius almost twice as long as the third. The first fuscous fascia of the fore wing runs along the basal nervure, broadening rapidly from the costa; the second is very broad, filling the whole of the second and third cubital cells, the radial cell except the extreme apex, the apex of the first cubital cell, the apex of the first discoidal cell, the second discoidal cell except the base, and the base of the third discoidal cell.

Hab. Mlanje, Nyasaland (*S. A. Neave*), December 1913 and January 1914.

Except in the very different colouring of the wings the differences between this and *contristans* are very small.

Cryptosalius pertuctuosus, sp. n.

♀. Nigra, opaca; pedibus fusco-ferrugineis; alis hyalinis, anticis fusco bifasciatis.

Long. 12 mm.

♀. Very similar in structure to the two last species, differing in the following points:—Eyes nearer together on the vertex, the posterior ocelli being half as far again from each other as from the eyes; pronotum fully as long as the mesonotum, the sculpture of the thorax fine as in *contristans*; pleuræ sparsely punctured, the punctures large; sides of the median segment delicately striated, with sparse punctures; scutellum without a carina. The second fascia of the fore wing is much narrower than in *indocilis*, occupying the radial

cell except the extreme apex, the second and third cubital cells, and the apical third of the second discoidal cell.

Hab. S.W. of Lake Chilwa, Nyasaland (*S. A. Neave*), January 1914.

Cryptosalius elgonensis, sp. n.

♀. Fusco-ferruginea; mesonoto, abdomine flagelloque nigris; alis subhyalinis, anticis fusco-fasciatis.

Var. Mesonoto fusco-ferrugineo.

Long. 10–11 mm.

♀. Posterior ocelli a little nearer to the eyes than to each other. Head and thorax closely microscopically punctured, the mesonotum nearly twice as long as the pronotum in the middle; propleuræ with microscopic oblique striæ, mesopleuræ with large sparse punctures interspersed with the minute puncturation. Carina of the scutellum almost obsolete. Median segment, legs, and neuration as in *perluctuosus*; fasciæ of the fore wing as in that species, the second fascia a little broader in the discoidal cells.

Hab. Southern slopes of Mt. Elgon, 5100–5800 ft. (*S. A. Neave*), June 1911; Daro Forest, Toro, Uganda Protectorate, 4000–4500 ft. (*S. A. Neave*), October 1911.

The pronotum is much shorter than in the allied species.

XLII.—Notes on *Fossorial Hymenoptera*.—XXXV. On new Sphecoidea in the British Museum. By ROWLAND E. TURNER, F.Z.S., F.E.S.

PROTOSTIGMUS, gen. nov.

Head large, much broader than the thorax. Eyes reaching the base of the mandibles, their inner margins almost parallel. Mandibles bidentate at the apex. Antennæ inserted very low down near the apical angles of the clypeus; scape long, rather less than half as long as the flagellum. Pronotum short, narrower than the mesonotum, rounded at the angles, the calli reaching back to the tegulæ; median segment short and small, opaque and without coarse sculpture. Abdomen not petiolate. Fore tarsi unarmed; hind tibiæ almost smooth, very feebly serrate towards the apex. Stigma large, more than twice as long as the greatest breadth, much smaller than in *Ammoplanus*. Radius